

**FOCUSED SURVEY REPORT  
FOR THE  
QUINO CHECKERSPOT BUTTERFLY  
ON THREE PARCELS NEAR BOULEVARD,  
SAN DIEGO COUNTY, CALIFORNIA**

**Prepared for:**

**Robin Church Biological Consulting  
4215 Spring Street, Suite 321  
La Mesa, CA 91941**

**Prepared by:**

**Laguna Mountain Environmental, Inc.  
7969 Engineer Road, Suite 208  
San Diego, CA 92111**

**May 2007**



**Laguna Mountain Environmental, Inc.**

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## **Introduction**

Laguna Mountain Environmental, Inc. (Laguna Mountain) performed adult surveys for the Quino checkerspot butterfly (*Euphydryas editha quino*) on three adjacent parcels totaling approximately 137 acres in Boulevard, San Diego County, California (Figure 1). The site is located southwest of the community of Boulevard and west of Tierra del Sol and the Tecate Divide. The project area is approximately 1-mile south of Highway 94 and 1/4 mile east of the Campo Indian Reservation. It is accessible from Shasta Lane and is located in Section 2, Township 18 South, Range 6 East. The project area is shown on the Live Oak Springs 7.5' USGS Quadrangle (Figure 2). The proposed project involves a lot split and a proposed residential development permit issued by the County of San Diego.

As part of the current study, a habitat assessment was conducted on the property on March 26, 2007. The habitat assessment determined that non-excluded areas, as defined by the U. S. Fish and Wildlife Service (USFWS 2002), occur on the property. Excluded areas, not recommended for Quino surveys, are defined as:

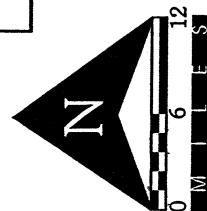
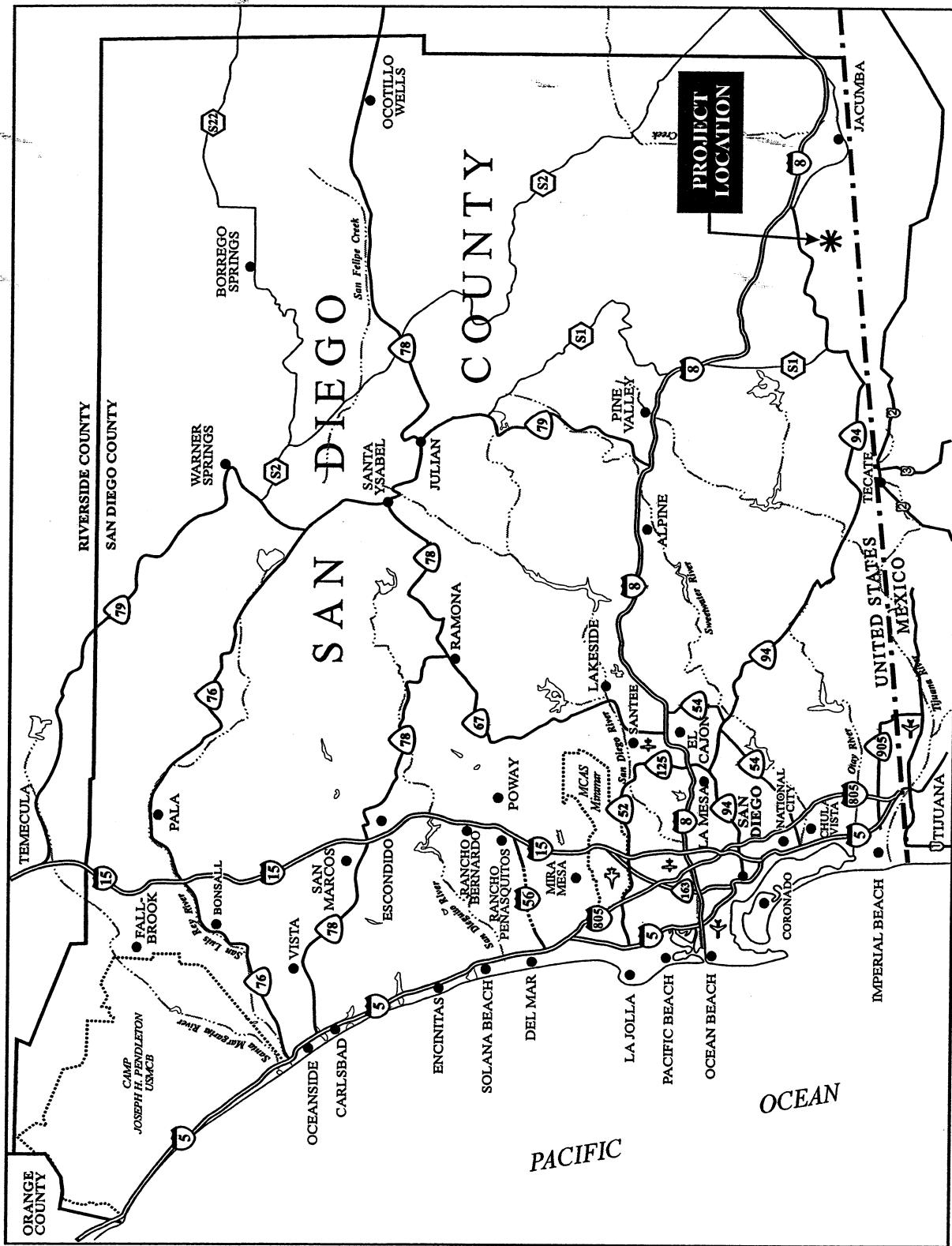
- Orchards, developed areas or in-fill parcels largely dominated by non-native vegetation;
- Active/in-use agricultural fields without natural or remnant inclusions of native vegetation;
- Closed-canopy forest or riparian area, dense chaparral and small openings completely enclosed with a closed-canopy or dense chaparral area.

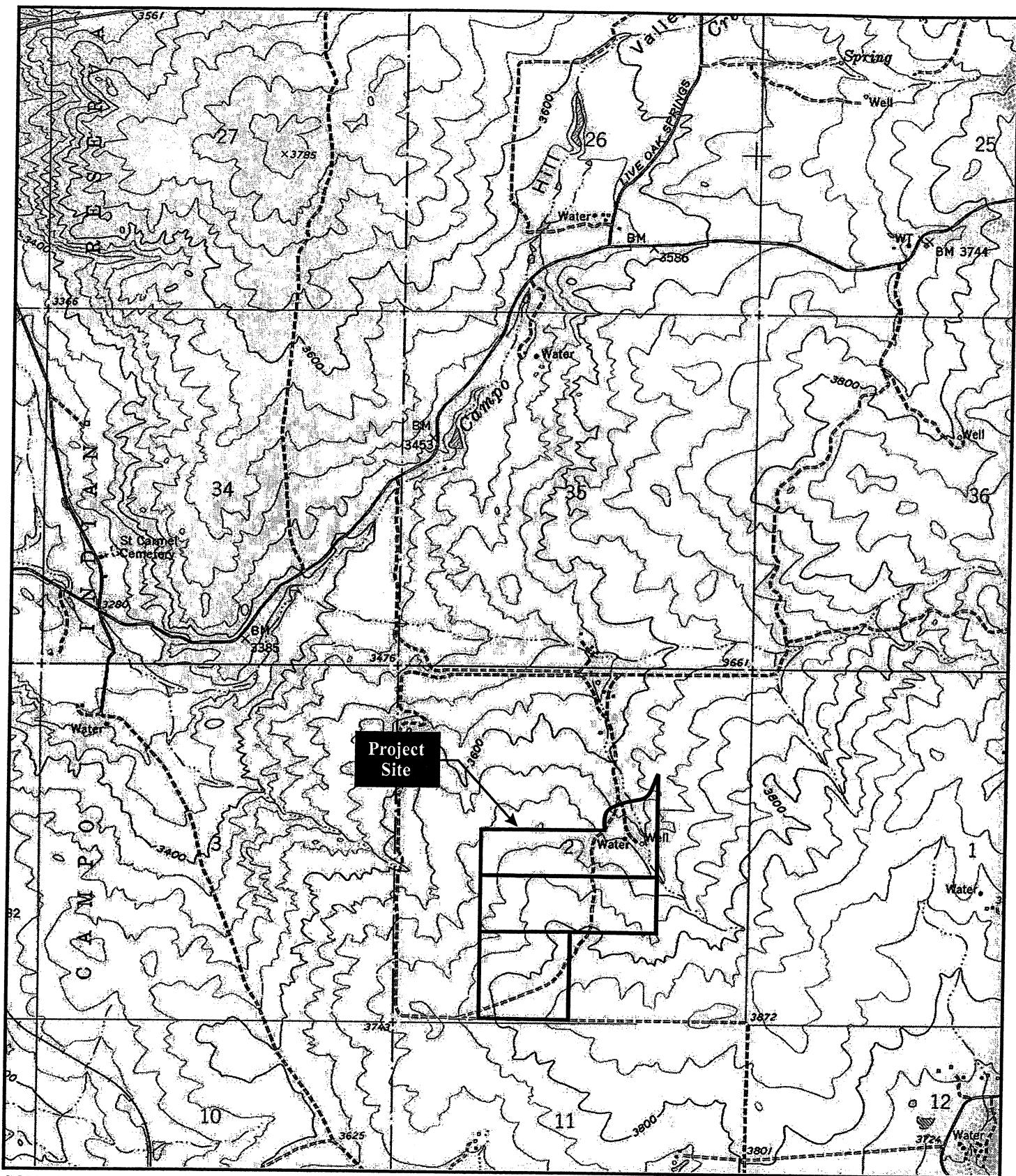
Excluded areas within the project area consist of dense mixed chaparral and oak woodland. Non-excluded areas included old and abandoned dirt roads and openings in chaparral and oak woodland habitats. This report documents the results of focused surveys conducted in these non-excluded areas which comprise approximately 60 acres of the project site (Figure 3).

## **Background**

The United States Fish and Wildlife Service (USFWS) officially listed the quino checkerspot butterfly (*Euphydryas editha quino*) as "endangered" on January 16, 1997 (USFWS 1997). For this reason the quino checkerspot is protected under the provisions of the Endangered Species Act of 1973, as amended. As such, "take" of this species, either directly or indirectly, is prohibited by law. In order to help landowners in preventing an unknowing "take" of this species, the USFWS has required that landowners have a protocol survey conducted on their land prior to project implementation in order to determine the presence or absence of this species.

**Figure 1**  
Regional Location Map





SOURCE: USGS 7.5' Live Oaks Springs Quadrangle

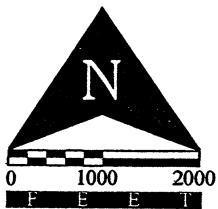
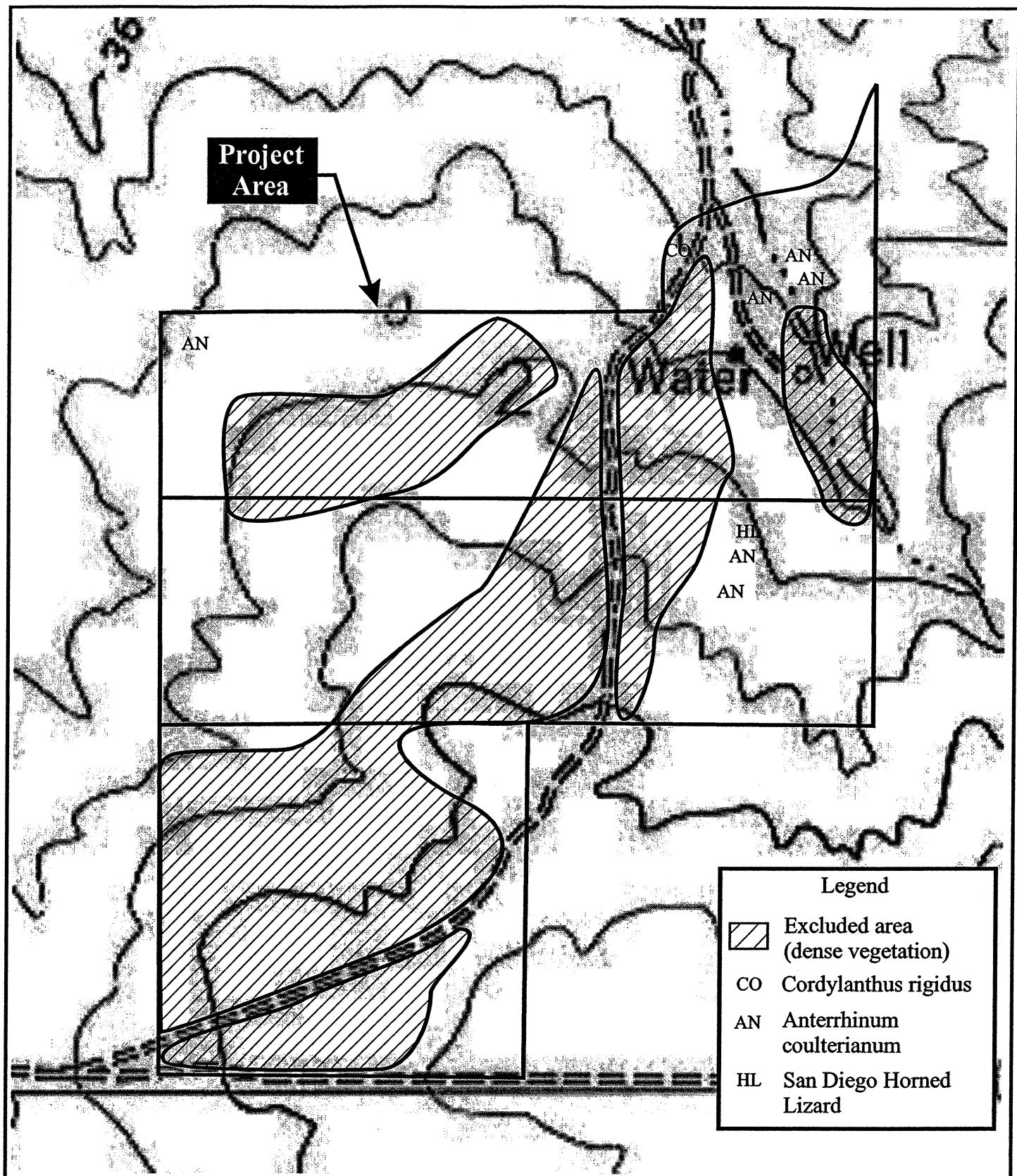


Figure 2  
Project Location





SOURCE: USGS 7.5' Live Oaks Springs Quadrangle

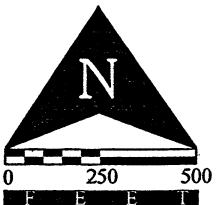


Figure 3  
Habitat Assessment

Laguna Mountain Environmental, Inc.



The Quino checkerspot butterfly is one of several subspecies of *Euphydryas editha*. It is a member of the brush-footed butterfly family (Nymphalidae). The Quino checkerspot is associated with a variety of habitats which include clay soil meadows, grassland, coastal sage scrub, chamise chaparral, red shank chaparral, juniper woodland and semi-desert (Ballmer et al. 2000). Despite association with a wide range of habitat, distribution of this species is restricted to areas which support the larval host plants. The primary host plant for the Quino checkerspot is *Plantago erecta*. Other possible larval host plant species include *Plantago patagonica*, *Antirrhinum coulterianum*, *Castilleja exserta*, and/or *Cordylanthus rigidus* (USFWS 2002), as well as *Collinsia* and other *Scrophulariaceae* (Ballmer et al. 2000). Generally the flight season for the Quino checkerspot occurs from late February through April, peaking in March or April.

## Methods

Survey methods followed those outlined in the Year 2002 Survey Protocol for the Quino checkerspot butterfly (USFWS 2002).

- Surveys were conducted by a permitted biologist and not concurrently with other focused surveys.
- Surveys were conducted on non-consecutive days once per week throughout the flight season.
- Surveys were conducted only during acceptable weather conditions (i.e. no fog, drizzle, rain; no sustained winds greater than 15 miles per hour measured four to six feet above ground level; temperature in the shade at ground level was not less than 60°F on a clear, sunny day; or temperature in the shade at ground level was not less than 70°F on an overcast or cloudy day).
- Site was surveyed at an average rate of 10 to 15 acres per hour.

The surveys for adult Quino checkerspot were conducted by Andrew R. Pigniolo (Permit No.TE-053020-0) and Natalie J. Brodie (Permit No. TE-135948-0) between March 26 and April 27, 2007. The surveys were conducted on a weekly basis when acceptable weather conditions defined in the U. S. Fish and Wildlife Service protocol occurred. The surveys involved slowly walking roughly parallel transects through the non-excluded habitat, including disturbed areas such as roads. The survey was conducted at an average rate of approximately 8-10 acres per hour. The surveyor stopped periodically to scan adjacent areas for moving butterflies. All butterfly species observed were identified and recorded.

Survey times and weather conditions are presented in the field notes provided in Appendix A and summarized in Table 1.

**Table 1. Quino Checkerspot Adult Survey Dates and Weather Conditions**

Date	Time		Weather Conditions
March 26, 2007	Start: 1030	End: 1515	Start: Sunny with high clouds, ground temp: 64° F, wind between 0 and 10 mph End: Partly sunny with high clouds, ground temp: 72° F, wind between 0 and 10 mph
April 3, 2007	Start: 0930	End: 1500	Start: Sunny and clear, ground temp: 66° F, wind between 0 and 6 mph End: Sunny and clear, ground temp: 74° F, wind between 0 and 8 mph
April 9, 2007	Start: 1045	End: 1500	Start: Sunny and clear, ground temp: 60° F, wind between 0 and 8 mph End: Sunny and clear, ground temp: 69° F, wind between 2 and 10 mph
April 19, 2007	Start: 1030	End: 1445	Start: Sunny and clear, ground temp: 60° F, wind between 2 and 8 mph End: Sunny and clear, ground temp: 72° F, wind between 2 and 8 mph
April 27, 2007	Start: 1100	End: 1515	Start: Sunny and clear, ground temp: 78° F, wind between 2 and 11 mph End: Sunny and clear, ground temp: 77° F, wind between 2 and 11 mph

## **Physical Setting**

A major drainage passes north/south through the eastern portion of the project area and dirt roads and a well and old water tank are also present in this portion of the project. Other areas of the property are largely undisturbed and include an old dirt road and small motor bike tracks. Foot paths were also noted on the property. Non-native are minimal and annual flowers and nectar sources are abundant, such as *Lasthenia californica* and *Linanthus dianthiflorus*. Elevations within the project area range from approximately 3,620 feet above mean sea level (AMSL) in the northern portion of the project area to approximately 3,820 feet AMSL in the southern portion. A small drainage runs along the eastern edge of the property.

The three soil type series that occur within the project area include the Kitchen Creek Series, the La Posta Series, and the Mottsville Series (USDA 1973). The Kitchen Creek Series consists of somewhat excessively drained, deep to moderately deep loamy coarse sands. Kitchen Creek loamy coarse sand occurs with slopes of 5 to 9 percent on very broad ridges. The representative profile includes a surface layer that is dark brown, micaceous loamy coarse sand, to a light, brownish clay, to white, decomposed granitic rock in the lowest horizon (USDA 1973).

The La Posta Series consists of somewhat excessively drained loamy coarse sands that formed in material weathered from granodiorite (USDA 1973). The loamy coarse sand of this series, with slopes from 5 to 30 percent, dominates the higher areas of the project area. The representative profile includes a surface layer that is grayish-brown loamy coarse sand, to brown loamy coarse sand, to brown, weathered granodiorite in the lowest horizon (USDA 1973).

The Mottsville Series consists of excessively drained, very deep, loamy coarse sands that are formed in sandy sediments from granitic rock (USDA 1973). The loamy coarse sand of this series, with slopes from 2 to 9 percent, occurs on alluvial fans and alluvial plains. The representative profile includes a surface layer of grayish-brown, slightly acid loamy coarse sand, to a brown slightly acid loamy coarse sand (USDA 1973).

## **Vegetation**

Vegetation communities in the project area include southern coast live oak riparian woodland and southern mixed chaparral. The live oak riparian woodland is dominated by coast live oak (*Quercus agrifolia*) but also includes scattered willow and other riparian species. The understory ranges from open to shrubby. Within the project area this habitat is confined to the eastern drainage margin. This area also contained some potential larval hostplants.

Southern mixed chaparral dominates the majority of the property. Dominant species in southern mixed chaparral on the project site included chamise, scrub oak, lilac, redshanks, and buckwheat. A complete list of plant species observed on-site is included in Appendix B.

## **Larval Hostplants**

Stalks of *Cordylanthus rigidus* were observed during the habitat assessment, but these represented last year's growth. New seedlings were noted in the middle of April around the oak woodland and drainage area along the east side of the project. Small *Anterrhinum coulterianum* seedlings were also noted during the first surveys, and more plants were observed in subsequent surveys in the same area along the oak woodland. During the final survey on April 27, approximately 10 *Cordylanthus* seedlings and 25+ *Anterrhinum* seedlings were identified and appeared healthy and in bloom. The plants were limited to a small area near the drainage, although a few more possible *Anterrhinum* seedlings were observed near the road margins on the east side of the project area near the existing water tower and isolated plants in the north and south. Minimal herbivory was observed.

## **Results**

No adult or larval Quino checkerspot were detected during the surveys of the project area. Butterfly species observed are summarized in Table 2. Butterfly numbers and species diversity were relatively high, given areas of fairly appropriate habitat.

## **Conclusion**

The results of the focused surveys indicate that the Quino checkerspot does not occur in the project area. Areas of open ground and host plants that would potentially serve as Quino habitat were searched repeatedly during each weekly survey. *Cordylanthus rigidus* and *Anterrhinum coulterianum* were present, as well as good nectar sources including *Lasthenia californica* and *Linanthus dianthiflorus*, indicating potential habitat within the project area. The amount of host plant was fairly limited and isolated. Neither Quino larvae or adults were observed during the survey period.

## **Certification**

This concludes the report for a focused survey for the Quino checkerspot butterfly conducted on the Garza/Powell/Bennett property.

I certify that the information in this survey report and attached exhibits fully and accurately represents my work.

Natalie J. Brodie  
Natalie Brodie, Federal Permit Number TE-135948-0

21 May 2007  
Date

**Table 2. Butterfly Species Observed**

Survey Dates	3/26/07	4/3/07	4/9/07	4/19/07	4/27/07
<b>Species</b>					
Acmon blue ( <i>Icaricia acmon</i> )	1	2	8	17	7
Anise swallowtail ( <i>Papilio zelicaon</i> )	0	1	0	0	0
Behr's metalmark ( <i>Apodemia mormo virgulti</i> )	8	5	19	46	38
Brown elfin ( <i>Incisalia augustinus</i> )	4	1	0	0	0
California marble ( <i>Euchloe hyantis</i> )	6	0	0	0	0
Common white ( <i>Pontia protodice</i> )	4	7	1	0	0
Funereal duskywing ( <i>Erynnis funeralis</i> )	19	25	10	5	9
Gabb's checkerspot ( <i>Charidryas gabbii</i> )	0	0	0	0	4
Painted Lady ( <i>Vanessa cardui</i> )	6	2	0	2	0
Pale swallowtail ( <i>Papilio eurymedon</i> )	2	6	1	0	0
Perplexing hairstreak ( <i>Callophrys perplexa</i> )	63	27	21	6	1
Sara orangetip ( <i>Anthocharis sara</i> )	43	22	10	4	4
Southern blue ( <i>Glauopsyche lygdamus australis</i> )	10	3	3	2	0
Spring white ( <i>Pontia sisymbrii</i> )	0	0	0	3	0
Western tiger swallowtail ( <i>Papilio rutulus</i> )	0	1	0	0	0
Unidentified blue	0	0	0	0	3
Unidentified duskywing	0	1	0	0	0
Unidentified lady	0	1	0	0	0
Total	166	104	73	85	66

## References Cited

- Ballmer, G., Hawks, D., Osborne, K., and Pratt, G.  
2000 *The Quino Checkerspot Butterfly; Euphydryas editha quino.* Unpublished manuscript.
- U.S. Fish and Wildlife Service (USFWS)  
1997 *Endangered and Threatened Wildlife and Plants: Determination of Endangered Status for the Laguna Mountains Skipper and Quino Checkerspot Butterfly.* Federal Register 62(11):2313-2322.
- 2002 *Quino Checkerspot Butterfly (Euphydryas editha quino).* Survey Protocol Information. Unpublished manuscript available from the Carlsbad Field Office, Carlsbad, California.
- United States Department of Agriculture (USDA)  
1973 *Soil Survey, San Diego Area, California.*

**APPENDIX A. Copies of Original Field Notes**

## QUINO SURVEY FIELD FORM

PROJECT/LOCATION (attach figure if necessary)

Garza / Bennett / Powell - Camp 20

DATE: 26 Mar 07 DAY OF WEEK: Mon

START TIME: 1030

END TIME: 1515

START CONDITIONS - WIND: 0-10 mph

TEMPERATURE: 60° F

SKY: sunny w/ high clouds  
haze

END CONDITIONS - WIND: 0-10 mph

TEMPERATURE: 72° F

SKY: partly sunny / high clouds

## OBSERVATIONS:

Habitat Conditions: small acacias, manzanita blooming, reanothus, peony, yucca whipplei

Host Plant Conditions: some dead cordylanthus, pas anterhium sprouts

## SPECIES OBSERVED:

TOTAL

Acmon blue (*Icaricia acmon*)Alfalfa butterfly (*Colias eurytheme*)Anise swallowtail (*Papilio zelicaon*)Behr's metalmark (*Apodemia mormo virgulti*) 1111 11 \* 1

8

Brown elfin (*Incisalia augustinus*) 111

4

Buckeye (*Junonia coenia*)Cabbage white (*Artogeia rapae*)California dogface (*Zerene eurydice*)California ringlet (*Coenonympha california california*)California sister (*Adelpha bredowii californica*)California tortoiseshell (*Nymphalis californica*)Chalcedon checkerspot (*Euphydryas chalcedona chalcedona*)Common white (*Pontia protodice*) 1111

4

Echo blue (*Celastrina ladon echo*)Edward's blue (*Hemiargus ceraunus gyas*)Felder's orangetip (*Anthocharis cethura*)Funereal duskywing (*Erynnis funeralis*) 1111 1111 1111 11 \* 1

19

Gabb's checkerspot (*Charidryas gabbii*)Gray hairstreak (*Strymon melinus*)Great purple hairstreak (*Atlides halesus*)

DATE: 26 Mar 07

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**SPECIES OBSERVED (Continued):**

**TOTAL**

## QUINO SURVEY FIELD FORM

\* horned lizard

PROJECT/LOCATION (attach figure if necessary)

Garza/Powell/Bennett

DATE: 3 Apr 07 DAY OF WEEK: Tuesday START TIME: 0930 END TIME: 1600

START CONDITIONS - WIND: 0-6 MPH TEMPERATURE: 66° SKY: clear &amp; sunny

END CONDITIONS - WIND: 6-8 MPH TEMPERATURE: 74° SKY: clear &amp; sunny

## OBSERVATIONS:

Habitat Conditions: peony, ceanothus, poppies, plagiobothrys, mustard(?), yucca whipplei, mission manzanita, rhus ovata, rancheria fiddleneck.

\* small patch of goldfields near road intersections in oak habitat, mixed with poppies, healthy, more to bloom, another patch e southern - mat locust

Host Plant Conditions: some dead cordylanthus, small patch of anterrhinum near other isolated anterrhinum

## SPECIES OBSERVED:

TOTAL

Acmon blue (*Icaricia acmon*) 11

2

Alfalfa butterfly (*Colias eurytheme*)Anise swallowtail (*Papilio zelicaon*) 1

1

Behr's metalmark (*Apodemia mormo virgulti*) X11

5

Brown elfin (*Incisalia augustinus*) 1

1

Buckeye (*Junonia coenia*)Cabbage white (*Artogeia rapae*)California dogface (*Zerene eurydice*)California ringlet (*Coenonympha california califronia*)California sister (*Adelpha bredowii californica*)California tortoiseshell (*Nymphalis californica*)Chalcedon checkerspot (*Euphydryas chalcedona chalcedona*)Common white (*Pontia protodice*) X11 11

7

Echo blue (*Celastrina ladon echo*)Edward's blue (*Hemiargus ceraunus gyas*)Felder's orangetip (*Anthocharis cethura*)Funereal duskywing (*Erynnis funeralis*) X11 X11 X11 X11 X11

28

Gabb's checkerspot (*Charidryas gabbii*)Gray hairstreak (*Strymon melinus*)Great purple hairstreak (*Atilides halesus*)

DATE: 3 Apr 67

Page 2 of 2

## SPECIES OBSERVED (Continued):

TOTAL

<u>Harford's sulfer (<i>Colias harfordi</i>)</u>	
<u>Henne's checkerspot (<i>Duphydryas chalcedona hennei</i>)</u>	
<u>Leanira checkerspot (<i>Thessalia leanira wrighti</i>)</u>	
<u>Lorquin's admiral (<i>Basilarchia lorquini</i>)</u>	
<u>Marine blue (<i>Leptotes marina</i>)</u>	
<u>Monarch (<i>Danaus plexippus</i>)</u>	
<u>Mourning cloak (<i>Nymphalis antiopa</i>)</u>	
<u>Mylitta crescent (<i>Phyciodes mylitta</i>)</u>	
<u>Painted lady (<i>Vanessa cardui</i>)</u>	11
<u>Pale swallowtail (<i>Papilio eurymedon</i>)</u>	1X1
<u>Perplexing hairstreak (<i>Callophrys perplexa</i>)</u>	1XT 1X1 1XT 1X1 1XT 11
<u>Pigmy blue (<i>Brephidium exilis</i>)</u>	
<u>Queen butterfly (<i>Danaus gilippus</i>)</u>	
<u>Quino checkerspot (<i>Euphydryas editha quino</i>)</u>	
<u>Red admiral (<i>Vanessa atalanta</i>)</u>	
<u>Sara orangetip (<i>Anthocharis sara</i>)</u>	1X1 1X1 1X1 1XT 11
<u>Satyr anglewing (<i>Polygonia satyrus</i>)</u>	
<u>Sleepy orange (<i>Eurema niceppe</i>)</u>	
<u>Sonoran blue (<i>Philotes sonorensis</i>)</u>	
<u>Southern blue (<i>Glaucopsyche lygdamus australis</i>)</u>	11
<u>Virginia lady (<i>Vanessa virginiana</i>)</u>	
<u>West Coast lady (<i>Vanessa annabella</i>)</u>	
<u>Western tailed blue (<i>Everes amyntula</i>)</u>	
<u>Western tiger swallowtail (<i>Papilio rutulus</i>)</u>	1
<u>Wright's metalmark (<i>Calephelis wrightii</i>)</u>	
<u>unidentified brown duskywing</u>	1
<u>unidentified lady</u>	1

104

Surveyor: N. Rondie

## QUINO SURVEY FIELD FORM

PROJECT/LOCATION (attach figure if necessary)

Barza Powell

DATE: 4/3/07 DAY OF WEEK: Tuesday START TIME: 11:15 END TIME: 15:00

START CONDITIONS - WIND: 0-5 mph TEMPERATURE: 67° SKY: Sunny &amp; clear

END CONDITIONS - WIND: 0-7 mph TEMPERATURE: 74° SKY: Sunny &amp; clear

## OBSERVATIONS:

Habitat Conditions: Lasthenia starting to bloom

Host Plant Conditions: Possible Antirrhinum seedlings observed. Only dead Erythranthus stalks.

## SPECIES OBSERVED:

Acmon blue (*Icaricia acmon*) TOTAL  
11/11/11Alfalfa butterfly (*Colias eurytheme*)Anise swallowtail (*Papilio zelicaon*)Behr's metalmark (*Apodemia mormo virgulti*) 11/11/11Brown elfin (*Incisalia augustinus*)Buckeye (*Junonia coenia*)Cabbage white (*Artogeia rapae*)California dogface (*Zerene eurydice*)California ringlet (*Coenonympha california californica*)California sister (*Adelpha bredowii californica*)California tortoiseshell (*Nymphalis californica*)Chalcedon checkerspot (*Euphydryas chalcedona chalcedona*)Common white (*Pontia protodice*) 1Echo blue (*Celastrina ladon echo*)Edward's blue (*Hemiargus ceraunus gyas*)Felder's orangetip (*Anthocharis cethura*)Funereal duskywing (*Erynnis funeralis*) 11/11/11Gabb's checkerspot (*Charidryas gabbii*)Gray hairstreak (*Strymon melinus*)Great purple hairstreak (*Ailides halesus*)

DATE: 4/3/07

Page 2 of 2

**SPECIES OBSERVED (Continued):**

**TOTAL**

- Harford's sulfer (*Colias harfordi*)

Henne's checkerspot (*Duphydryas chalcedona hennei*)

Leanira checkerspot (*Thessalia leanira wrighti*)

Lorquin's admiral (*Basilarchia lorquini*)

Marine blue (*Leptotes marina*)

Monarch (*Danaus plexippus*)

Mourning cloak (*Nymphalis antiopa*)

Mylitta crescent (*Phyciodes mylitta*)

Painted lady (*Vanessa cardui*)

Pale swallowtail (*Papilio eurymedon*)

Perplexing hairstreak (*Callophrys perplexa*) ||| H H T M M H H H

Pigmy blue (*Brephidium exilis*)

Queen butterfly (*Danaus gilippus*)

Quino checkerspot (*Euphydryas editha quino*)

Red admiral (*Vanessa atalanta*)

Sara orangetip (*Anthocharis sara*) M J H H V T A H

Satyr anglewing (*Polygonia satyrus*)

Sleepy orange (*Eurema niceppe*)

Sonoran blue (*Philotes sonorensis*)

Southern blue (*Glauopsyche lygdamus australis*) ||

Virginia lady (*Vanessa virginiana*)

West Coast lady (*Vanessa annabella*)

Western tailed blue (*Everes amyntula*)

Western tiger swallowtail (*Papilio rutulus*) |

Wright's metalmark (*Calephelis wrightii*)

Surveyor: Andrew Pignolo

## QUINO SURVEY FIELD FORM

PROJECT/LOCATION (attach figure if necessary)

Garza/Powell/Pennett

DATE: 9 Apr 07 DAY OF WEEK: Monday START TIME: 1045 END TIME: 1500

START CONDITIONS - WIND: 0-8 MPH TEMPERATURE: 60° F SKY: sunny

END CONDITIONS - WIND: 2-10 MPH TEMPERATURE: 69° F SKY: sunny

## OBSERVATIONS:

Habitat Conditions: cryptantha phacelia, canothus, yucca whipplei, poppies,  
\*goldfields, ranchers fiddleheads, scarlet pimpernel (blue var), peony, sined,  
mtn. mahogany,

Host Plant Conditions: some dead cordylanthus stalks

## SPECIES OBSERVED:

Acmon blue ( <i>Icaricia acmon</i> )	III	TOTAL 8
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Alfalfa butterfly ( <i>Colias eurytheme</i> )	
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Anise swallowtail ( <i>Papilio zelicaon</i> )	
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Behr's metalmark ( <i>Apodemia mormo virgulti</i> )	III	IV	III	19
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Brown elfin ( <i>Incisalia augustinus</i> )	
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Buckeye ( <i>Junonia coenia</i> )	
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Cabbage white ( <i>Artogeia rapae</i> )	
---	--

California dogface ( <i>Zerene eurydice</i> )	
---	--

California ringlet ( <i>Coenonympha california californica</i> )	
--	--

California sister ( <i>Adelpha bredowii californica</i> )	
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California tortoiseshell ( <i>Nymphalis californica</i> )	
---	--

Chalcedon checkerspot ( <i>Euphydryas chalcedona chalcedona</i> )	
---	--

Common white ( <i>Pontia protodice</i> )	1
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Echo blue ( <i>Celastrina ladon echo</i> )	
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Edward's blue ( <i>Hemiargus ceraunus gyas</i> )	
--	--

Felder's orangetip ( <i>Anthocharis cethura</i> )	
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Funereal duskywing ( <i>Erynnis funeralis</i> )	III	IV	10
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Gabb's checkerspot ( <i>Charidryas gabbii</i> )	
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Gray hairstreak ( <i>Strymon melinus</i> )	
--	--

Great purple hairstreak ( <i>Atlides halesus</i> )	
--	--

DATE: 9 Apr 07

Page 2 of 2

## SPECIES OBSERVED (Continued):

TOTAL

Harford's sulfer (*Colias harfordi*)Henne's checkerspot (*Duphydryas chalcedona hennei*)Leanira checkerspot (*Thessalia leanira wrighti*)Lorquin's admiral (*Basilarchia lorquini*)Marine blue (*Leptotes marina*)Monarch (*Danaus plexippus*)Mourning cloak (*Nymphalis antiopa*)Mylitta crescent (*Phyciodes mylitta*)Painted lady (*Vanessa cardui*)Pale swallowtail (*Papilio eurymedon*) 1Perplexing hairstreak (*Callophrys perplexa*) 1W 1H 1W 1H 1

21

Pigmy blue (*Brephidium exilis*)Queen butterfly (*Danaus gilippus*)Quino checkerspot (*Euphydryas editha quino*)Red admiral (*Vanessa atalanta*)Sara orangetip (*Anthocharis sara*) 1W 1H

10

Satyr anglewing (*Polygonia satyrus*)Sleepy orange (*Eurema niceppe*)Sonoran blue (*Philotes sonorensis*)Southern blue (*Glaucopsyche lygdamus australis*) 1W

3

Virginia lady (*Vanessa virginensis*)West Coast lady (*Vanessa annabella*)Western tailed blue (*Everes amyntula*)Western tiger swallowtail (*Papilio rutulus*)Wright's metalmark (*Calephelis wrightii*)

(73)

Surveyor: N. Brodie

## QUINO SURVEY FIELD FORM

PROJECT/LOCATION (attach figure if necessary)

Barzai Bennett/PowellDATE: 9 Apr 07 DAY OF WEEK:START TIME: 1045 END TIME: 1500START CONDITIONS - WIND: 0-5 mph TEMPERATURE: 60 SKY: Sunny & ClearEND CONDITIONS - WIND: 2-10 mph TEMPERATURE: 69° SKY: Sunny & Clear

## OBSERVATIONS:

Habitat Conditions: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_Host Plant Conditions: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

## SPECIES OBSERVED:

Acmon blue (*Icaricia acmon*) TOTAL 1/1Alfalfa butterfly (*Colias eurytheme*)Anise swallowtail (*Papilio zelicaon*)Behr's metalmark (*Apodemia mormo virgulti*) 1/1 1/1 1/1 1/1 1/1 1/1 1/1 1/1Brown elfin (*Incisalia augustinus*)Buckeye (*Junonia coenia*)Cabbage white (*Artogeia rapae*)California dogface (*Zerene eurydice*)California ringlet (*Coenonympha california califonia*)California sister (*Adelpha bredowii californica*)California tortoiseshell (*Nymphalis californica*)Chalcedon checkerspot (*Euphydryas chalcedona chalcedona*)Common white (*Pontia protodice*)Echo blue (*Celastrina ladon echo*)Edward's blue (*Hemiargus ceraunus gyas*)Felder's orangetip (*Anthocharis cethura*)Funereal duskywing (*Erynnis funeralis*) 1/1 1/1 1/1Gabb's checkerspot (*Charidryas gabbii*)Gray hairstreak (*Strymon melinus*)Great purple hairstreak (*Atlides halesus*)

DATE: 9 Apr 07

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## SPECIES OBSERVED (Continued):

	TOTAL
<u>Harford's sulfer (<i>Colias harfordi</i>)</u>	
<u>Henne's checkerspot (<i>Duphydryas chalcedona hennei</i>)</u>	
<u>Leanira checkerspot (<i>Thessalia leanira wrighti</i>)</u>	
<u>Lorquin's admiral (<i>Basilarchia lorquini</i>)</u>	
<u>Marine blue (<i>Leptotes marina</i>)</u>	
<u>Monarch (<i>Danaus plexippus</i>)</u>	
<u>Mourning cloak (<i>Nymphalis antiopa</i>)</u>	
<u>Mylitta crescent (<i>Phyciodes mylitta</i>)</u>	
<u>Painted lady (<i>Vanessa cardui</i>)</u>	
<u>Pale swallowtail (<i>Papilio eurymedon</i>)</u>	
<u>Perplexing hairstreak (<i>Callophrys perplexa</i>)</u>	1
<u>Pigmy blue (<i>Brephidium exilis</i>)</u>	
<u>Queen butterfly (<i>Danaus gilippus</i>)</u>	
<u>Quino checkerspot (<i>Euphydryas editha quino</i>)</u>	
<u>Red admiral (<i>Vanessa atalanta</i>)</u>	
<u>Sara orangetip (<i>Anthocharis sara</i>)</u>	
<u>Satyr anglewing (<i>Polygonia satyrus</i>)</u>	1
<u>Sleepy orange (<i>Eurema niceppe</i>)</u>	
<u>Sonoran blue (<i>Philotes sonorensis</i>)</u>	
<u>Southern blue (<i>Glauopsyche lygdamus australis</i>)</u>	1
<u>Virginia lady (<i>Vanessa virginensis</i>)</u>	
<u>West Coast lady (<i>Vanessa annabella</i>)</u>	
<u>Western tailed blue (<i>Everes amyntula</i>)</u>	
<u>Western tiger swallowtail (<i>Papilio rutulus</i>)</u>	
<u>Wright's metalmark (<i>Calephelis wrightii</i>)</u>	

Surveyor: Andrew Pignirolo



SPECIES OBSERVED (Continued):	TOTAL
<u>Harford's sulfer (<i>Colias harfordi</i>)</u>	
<u>Henne's checkerspot (<i>Duphydryas chalcedona hennei</i>)</u>	
<u>Leanira checkerspot (<i>Thessalia leanira wrighti</i>)</u>	
<u>Lorquin's admiral (<i>Basilarchia lorquini</i>)</u>	
<u>Marine blue (<i>Leptotes marina</i>)</u>	
<u>Monarch (<i>Danaus plexippus</i>)</u>	
<u>Mourning cloak (<i>Nymphalis antiopa</i>)</u>	
<u>Mylitta crescent (<i>Phyciodes mylitta</i>)</u>	
<u>Painted lady (<i>Vanessa cardui</i>)</u> //	2
<u>Pale swallowtail (<i>Papilio eurymedon</i>)</u>	
<u>Perplexing hairstreak (<i>Callophrys perplexa</i>)</u> //X 1	6
<u>Pigmy blue (<i>Brephidium exilis</i>)</u>	
<u>Queen butterfly (<i>Danaus gilippus</i>)</u>	
<u>Quino checkerspot (<i>Euphydryas editha quino</i>)</u>	
<u>Red admiral (<i>Vanessa atalanta</i>)</u>	
<u>Sara orangetip (<i>Anthocharis sara</i>)</u> //I	4
<u>Satyr anglewing (<i>Polygonia satyrus</i>)</u>	
<u>Sleepy orange (<i>Eurema nicippe</i>)</u>	
<u>Sonoran blue (<i>Philotes sonorensis</i>)</u>	
<u>Southern blue (<i>Glaucopsyche lygdamus australis</i>)</u> //	2
<u>Virginia lady (<i>Vanessa virginiensis</i>)</u>	
<u>West Coast lady (<i>Vanessa annabella</i>)</u>	
<u>Western tailed blue (<i>Everes amyntula</i>)</u>	
<u>Western tiger swallowtail (<i>Papilio rutulus</i>)</u>	
<u>Wright's metalmark (<i>Calephelis wrightii</i>)</u>	
<u>Spring white</u> //	3

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## QUINO SURVEY FIELD FORM

PROJECT/LOCATION (attach figure if necessary)

*Borrego/Powell/Bennett*

DATE: 4/19/07 DAY OF WEEK: Thursday START TIME: 1030 END TIME: 1445

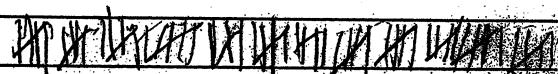
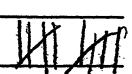
START CONDITIONS - WIND: 2-8 mph TEMPERATURE: 60° SKY: Sunny &amp; Clear

END CONDITIONS - WIND: 2-8 mph TEMPERATURE: 72° SKY: Sunny &amp; Clear

## OBSERVATIONS:

Habitat Conditions: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_Host Plant Conditions: *Cordylanthus* seedlings present and about 1 inch  
\_\_\_\_\_

## SPECIES OBSERVED:

Acmon blue (*Icaricia acmon*) 1 TOTALAlfalfa butterfly (*Colias eurytheme*)Anise swallowtail (*Papilio zelicaon*)Behr's metalmark (*Apodemia mormo virgulti*) Brown elfin (*Incisalia augustinus*)Buckeye (*Junonia coenia*)Cabbage white (*Artogeia rapae*)California dogface (*Zerene eurydice*)California ringlet (*Coenonympha california californica*)California sister (*Adelpha bredowii californica*)California tortoiseshell (*Nymphalis californica*)Chalcedon checkerspot (*Euphydryas chalcedona chalcedona*)Common white (*Pontia protodice*) 1Echo blue (*Celastrina ladon echo*)Edward's blue (*Hemiargus ceraunus gyas*)Felder's orangetip (*Anthocharis cethura*)Funereal duskywing (*Erynnis funeralis*) Gabb's checkerspot (*Charidryas gabbii*)Gray hairstreak (*Strymon melinus*)Great purple hairstreak (*Atlides halesus*)

DATE: 4/19/07

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SPECIES OBSERVED (Continued):

TOTAL

Harford's sulfer (*Colias harfordi*)

Henne's checkerspot (*Duphydryas chalcedona hennei*)

Leanira checkerspot (*Thessalia leanira wrighti*)

Lorquin's admiral (*Basilarchia lorquini*)

Marine blue (*Leptotes marina*)

Monarch (*Danaus plexippus*)

Mourning cloak (*Nymphalis antiopa*)

Mylitta crescent (*Phyciodes mylitta*)

Painted lady (*Vanessa cardui*)

Pale swallowtail (*Papilio eurymedon*)

Perplexing hairstreak (*Callophrys perplexa*)

11/11

Pigmy blue (*Brephidium exilis*)

Queen butterfly (*Danaus gilippus*)

Quino checkerspot (*Euphydryas editha quino*)

Red admiral (*Vanessa atalanta*)

Sara orangetip (*Anthocharis sara*)

7/11

Satyr anglewing (*Polygonia satyrus*)

Sleepy orange (*Eurema nicippe*)

Sonoran blue (*Philotes sonorensis*)

Southern blue (*Glaucopsyche lygdamus australis*)

11

Virginia lady (*Vanessa virginensis*)

West Coast lady (*Vanessa annabella*)

Western tailed blue (*Everes amyntula*)

Western tiger swallowtail (*Papilio rutulus*)

Wright's metalmark (*Calephelis wrightii*)

Surveyor: Andrew Pigniolo

# QUINO SURVEY FIELD FORM

PROJECT/LOCATION (attach figure if necessary)

Garza/Powell/Pennell

DATE: 27 Apr 07 DAY OF WEEK: Friday START TIME: 1100 END TIME: 1515

START CONDITIONS - WIND: 2-11 mph TEMPERATURE: 78°F SKY: clear

END CONDITIONS - WIND: 2-11 mph TEMPERATURE: 77°F SKY: clear

OBSERVATIONS:

Habitat Conditions: peristemon spectabilis, yucca whipplei, wallace's wooly daisy, plagiocephalus, golden yarrow, Bahada lupine, ground pink, Mesclia, yucca whipplei, Lathenaria californica, lomatium, erodium, Ceanothus leucodermis, poison, rancher's fiddleneck, Blue dicks

Host Plant Conditions: some coreopsis seedlings near anterrhinum location (near oakly drainage), goldfields in ground pink healthy bloom.

SPECIES OBSERVED:

	TOTAL
Acmon blue ( <i>Icaricia acmon</i> )	7
Alfalfa butterfly ( <i>Colias eurytheme</i> )	
Anise swallowtail ( <i>Papilio zelicaon</i> )	
Behr's metalmark ( <i>Apodemia mormo virgulti</i> )	38
Brown elfin ( <i>Incisalia agnustinus</i> )	
Buckeye ( <i>Junonia coenia</i> )	
Cabbage white ( <i>Artogeia rapae</i> )	
California dogface ( <i>Zerene eurydice</i> )	
California ringlet ( <i>Coenonympha california california</i> )	
California sister ( <i>Adelpha bredowii californica</i> )	
California tortoiseshell ( <i>Nymphalis californica</i> )	
Chalcedon checkerspot ( <i>Euphydryas chalcedona chalcedona</i> )	
Common white ( <i>Pontia protodice</i> )	
Echo blue ( <i>Celastrina ladon echo</i> )	
Edward's blue ( <i>Hemiarthus ceraunus gyas</i> )	
Felder's orangetip ( <i>Anthocharis cethura</i> )	
Funereal duskywing ( <i>Erynnis funeralis</i> )	9
Gabb's checkerspot ( <i>Charidryas gabbii</i> )	4
Gray hairstreak ( <i>Strymon melinus</i> )	
Great purple hairstreak ( <i>Atlides halesus</i> )	

DATE: 27 Apr 07

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## SPECIES OBSERVED (Continued):

TOTAL

<u>Harford's sulfur (<i>Colias harfordi</i>)</u>	
<u>Henne's checkerspot (<i>Duphydryas chalcedona hennei</i>)</u>	
<u>Leanira checkerspot (<i>Thessalia leanira wrighti</i>)</u>	
<u>Lorquin's admiral (<i>Basilarchia lorquini</i>)</u>	
<u>Marine blue (<i>Leptotes marina</i>)</u>	
<u>Monarch (<i>Danaus plexippus</i>)</u>	
<u>Mourning cloak (<i>Nymphalis antiopa</i>)</u>	
<u>Mylitta crescent (<i>Phyciodes mylitta</i>)</u>	
<u>Painted lady (<i>Vanessa cardui</i>)</u>	
<u>Pale swallowtail (<i>Papilio eurymedon</i>)</u>	
<u>Perplexing hairstreak (<i>Callophrys perplexa</i>)</u>	1
<u>Pigmy blue (<i>Brephidium exilis</i>)</u>	
<u>Queen butterfly (<i>Danaus gilippus</i>)</u>	
<u>Quino checkerspot (<i>Euphydryas editha quino</i>)</u>	
<u>Red admiral (<i>Vanessa atalanta</i>)</u>	
<u>Sara orangetip (<i>Anthocharis sara</i>)</u>	111
<u>Satyr anglewing (<i>Polygōnia satyrus</i>)</u>	
<u>Sleepy orange (<i>Eurema niceppa</i>)</u>	
<u>Sonoran blue (<i>Philotes sonorensis</i>)</u>	
<u>Southern blue (<i>Glaucomysche lygdamus australis</i>)</u>	
<u>Virginia lady (<i>Vanessa virginiana</i>)</u>	
<u>West Coast lady (<i>Vanessa annabella</i>)</u>	
<u>Western tailed blue (<i>Everes amyntula</i>)</u>	
<u>Western tiger swallowtail (<i>Papilio rutulus</i>)</u>	
<u>Wright's metalmark (<i>Calephelis wrightii</i>)</u>	
<u>Unidentified blue</u>	111
	3

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Surveyor: N. Brodico

## QUINO SURVEY FIELD FORM

PROJECT/LOCATION (attach figure if necessary)

Garcia/Powell/BennettDATE: 4/27/07 DAY OF WEEK: Friday / START TIME: 11:00 END TIME: 15:15START CONDITIONS - WIND: 2-11 mph TEMPERATURE: 78° SKY: Sunny + clearEND CONDITIONS - WIND: 2-11 mph TEMPERATURE: 77° SKY: Sunny + clear

## OBSERVATIONS:

Habitat Conditions: Very good. Lasthenia and other low open soil annuals in peak bloom

Host Plant Conditions: Cardylanthus seedlings healthy no herbivory present.  
Antirrhinum seedlings healthy. Some rabbit herbivory present

## SPECIES OBSERVED:

Acorn blue (*Icaricia acmon*)TOTAL11/11Alfalfa butterfly (*Colias eurytheme*)Anise swallowtail (*Papilio zelicaon*)Behr's metalmark (*Apodemia mormo virgulti*)11/11/11/11/11/11/11/11Brown elfin (*Incisalia augustinus*)Buckeye (*Junonia coenia*)Cabbage white (*Artogeia rapae*)California dogface (*Zerene eurydice*)California ringlet (*Coenonympha california california*)California sister (*Adelpha bredowii californica*)California tortoiseshell (*Nymphalis californica*)Chalcedon checkerspot (*Euphydryas chalcedona chalcedona*)Common white (*Pontia protodice*)Echo blue (*Celastrina ladon echo*)Edward's blue (*Hemiargus ceraunus gyas*)Felder's orangetip (*Anthocharis cethura*)Funereal duskywing (*Erynnis funeralis*)11/11/11Gabb's checkerspot (*Charidryas gabbii*)11/11Gray hairstreak (*Strymon melinus*)Great purple hairstreak (*Atlides halesus*)

DATE: 4/27/07

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## SPECIES OBSERVED (Continued):

TOTAL

<u>Harford's sulfer (<i>Colias harfordi</i>)</u>	
<u>Henne's checkerspot (<i>Duphydryas chalcedona hennei</i>)</u>	
<u>Leanira checkerspot (<i>Thessalia leanira wrighti</i>)</u>	
<u>Lorquin's admiral (<i>Basilarchia lorquini</i>)</u>	
<u>Marine blue (<i>Leptotes marina</i>)</u>	
<u>Monarch (<i>Danaus plexippus</i>)</u>	
<u>Mourning cloak (<i>Nymphalis antiopa</i>)</u>	
<u>Mylitta crescent (<i>Phyciodes mylitta</i>)</u>	
<u>Painted lady (<i>Vanessa cardui</i>)</u>	
<u>Pale swallowtail (<i>Papilio eurymedon</i>)</u>	
<u>Perplexing hairstreak (<i>Callophrys perplexa</i>)</u>	
<u>Pigmy blue (<i>Brephidium exilis</i>)</u>	
<u>Queen butterfly (<i>Danaus gilippus</i>)</u>	
<u>Quino checkerspot (<i>Euphydryas editha quino</i>)</u>	
<u>Red admiral (<i>Vanessa atalanta</i>)</u>	
<u>Sara orangetip (<i>Anthocharis sara</i>)</u>	111
<u>Satyr anglewing (<i>Polygonia satyrus</i>)</u>	
<u>Sleepy orange (<i>Eurema nicippe</i>)</u>	
<u>Sonoran blue (<i>Philotes sonorensis</i>)</u>	
<u>Southern blue (<i>Glaucoopsyche lygdamus australis</i>)</u>	1
<u>Virginia lady (<i>Vanessa virginiensis</i>)</u>	
<u>West Coast lady (<i>Vanessa annabella</i>)</u>	
<u>Western tailed blue (<i>Everes amyntula</i>)</u>	
<u>Western tiger swallowtail (<i>Papilio rutulus</i>)</u>	
<u>Wright's metalmark (<i>Calephelis wrightii</i>)</u>	
<u>Violet blue</u>	1
Surveyor: Andrew Pigniolo	

## **APPENDIX B. Plant Species Observed**

**APPENDIX B**  
**PLANT SPECIES OBSERVED ON THE GARZA/POWELL PROPERTY**

Family Name	Species Name♦	Common Name	Habitat
AGAVACEAE	<i>Yucca schidigera</i>	Mohave yucca	SMC 1 2 3
	<i>Yucca whipplei</i>	Our Lord's candle	SMC 1 2 3, SOW 1
ANACARDIACEAE	<i>Rhus ovata</i>	Sugar bush	SMC 1 2 3
	<i>Rhus trilobata</i>	Squawbush	SMC, SOW 1 2
APIACEAE	<i>Apiastrum angustifolium</i>	Mock parsley	SMC 1 2 3
	<i>Bowlesia incana</i>	American bowlesia	SMC, SOW 1
ASTERACEAE	<i>Daucus pusillus</i>	Rattlesnake weed	SMC 1 2 3
	<i>Lomatium lucidum</i>	Shiny lomatium	SMC 2 3
	<i>Acourtia microcephala</i>	sacapellote	SMC 1 2 3
	<i>Agoseris retrorsa</i>	Spear-leaf agoseris	SOW 2
	<i>Anisocoma acaulis</i>	Scale-bud	SOW 1
	<i>Artemisia douglasiana</i>	Douglas mugwort	SOW 1
	<i>Artemisia dracunculus</i>	False tarragon	SOW 1 2
	<i>Artemisia tridentata</i>	Basin sagebrush	SOW 1
	<i>Chaenactis glabriuscula</i>	San Diego pincushion	SMC, SOW 1 2 3
	<i>Cirsium occidentale</i>	Cobweb thistle	SMC, SOW 1 2 3
	<i>Coreopsis bigelovii</i>	Bigelow's coreopsis	SOW 1 SMC 2
	<i>Corethrogyne filaginifolia</i>	Mountain cudweedaster	SOW, SMC 1 2
	<i>Ericameria ericoides pinifolia</i>	Pine goldenbush	
	<i>Ericameria linearifolia</i>	Narrowleaf goldenbush	SMC 1
	<i>Erigeron foliosus</i>	Fleabane	SMC 2
	<i>Eriophyllum confertiflorum</i>	Golden yarrow	SMC 1 2 3
	<i>Eriophyllum wallacei</i>	Wallace's woolly-daisy	SMC 1 2
	<i>Filago californica</i>	California filago	SMC 1 2 3
	<i>Geraea viscida</i>	Sticky geraea	SMC 1
	<i>Gnaphalium canescens</i>	Felty everlasting	SMC 1 2
	<i>Gutierrezia californica</i>	Broom matchweed	SMC, SOW 1 2 3
	<i>Lasthenia californica</i>	Goldfields	SMC 1 2 3
	<i>Lactuca serriola ♦</i>	Prickly lettuce	SOW 1
	<i>Layia glandulosa</i>	White tidy-tips	SOW 1
	<i>Malacothrix californica</i>	Desert dandelion	SMC 1 2
	<i>Microseris douglasii</i>	Douglas' microseris	SMC 1 2 3
	<i>Microseris lindleyi</i>	Silver puffs	SMC, SOW 1 2 3
	<i>Rafinesquia californica</i>	California chicory	SMC 1 2 3
	<i>Senecio californicus</i>	California butterweed	SMC 1 2
	<i>Sonchus asper ♦</i>	Prickly sowthistle	SOW1 , SMC 2
	<i>Stephanomeria exigua deanei</i>	Deane's wreath-plant	SMC 1 2 3
	<i>Stylocline gnaphaloides</i>	Everlasting neststraw	SMC 1 2 3
BORAGINACEAE	<i>Amsinckia intermedia</i>	Common fiddleneck	SMC, SOW 1 2 3
	<i>Cryptantha</i> sp.	cryptantha	SMC, SOW 1 2 3

	<i>Cryptantha intermedia</i>	Nievitas cryptantha	SMC, SOW 1 2 3
	<i>Pectocarya penicillata</i>	Winged pectocarya	SMC 1 2 3
	<i>Pectocarya setosa</i>	Bristly pectocarya	SMC 2 3
	<i>Plagiobothrys sp.</i>	popcornflower	SMC 1 2 3
BRASSICACEAE	<i>Arabis sparsiflora</i>		SOW, SMC 1 2 3
	<i>Athysanus pusillus</i>	Dwarf anthysanus	SMC 1 2 3
	<i>Caulanthus sp.</i>	caulanthus	SMC 1 2 3
	<i>Caulanthus sp.</i>	caulanthus	SMC 1 2
	<i>Descurainia pinnata</i>	Tansymustard	SMC 1 2 3
	<i>Draba cuneifolia</i>	Desert whitlow	SMC 1 2 3
	<i>Erysimum capitatum</i>	Douglas' wallflower	SOW 1 2
	<i>Lepidium sp.</i>	peppergrass	SMC, SOW 1
	<i>Sisymbrium sp. ♦</i>	rocket	SMC, SOW 1 2 3
	<i>Streptanthus campestris</i>	Southern jewelflower	SOW 2
	<i>Thysanocarpus curvipes</i>	Lacepod	SMC 1 3
CACTACEAE	<i>Opuntia acanthocarpa</i>	Buckhorn cholla	SMC 1 2 3
	<i>Opuntia occidentalis</i>	Western pricklypear	SMC 1 2 3
CAMpanulaceae	<i>Nemacladus longiflorus</i>	Longflower threadplant	SMC 1
	<i>Nemacladus ramosissimus</i>	Nuttall's threadplant	SMC 1 2 3
CAPRIFOLIACEAE	<i>Lonicera suspicata</i>	Chaparral honeysuckle	SMC 1 2 3
	<i>Sambucus mexicana</i>	Mexican elderberry	SOW 1
CARYOPHYLLACEAE	<i>Loeflingia squarrosa</i>	California loeflingia	SMC 1 2 3
CHENOPodiaceae	<i>Chenopodium californicum</i>	California goosefoot	SOW 1 2
CONVolvulaceae	<i>Cuscuta sp.</i>	dodder	SMC 1
CRASSULACEAE	<i>Crassula connata</i>		SMC 1 2 3
CUCURBITACEAE	<i>Marah macrocarpus</i>	Wild cucumber	SMC 1 2 3
DATIScACEAE	<i>Datisca glomerata</i>	Durangoroot	SOW 1, SMC 2
EPHEDRACEAE	<i>Ephedra californica</i>	California ephedra	SMC 1 2 3
ERICACEAE	<i>Arctostaphylos glauca</i>	Bigberry manzanita	SMC 1 2 3
	<i>Arctostaphylos pungens</i>	Mexican manzanita	SMC 1 2 3
FABACEAE	<i>Astragalus douglasii var. parishii</i>	locoweed	SOW 1 2
	<i>Lathyrus latiflorus</i>	Southern califrona pea	SMC 1
	<i>Lotus argophyllus</i>	Silverleaf lotus	SMC 2
	<i>Lotus sp.</i>	lotus	SMC 1
	<i>Lotus scoparius</i>	Deerweed	SMC 1 2 3
	<i>Lotus strigosus</i>	Bishop's lotus	SMC 1 2 3
	<i>Lupinus bicolor</i>	Dove lupine	SOW 1
	<i>Lupinus concinnus</i>	Bajada lupine	SOW 1
	<i>Lupinus latifolius parishii</i>	Parish's stream lupine	SOW 1
	<i>Lupinus sp.</i>	Lupine	SOW, SMC 1
	<i>Lupinus truncatus</i>	Collar lupine	SMC 3
	<i>Trifolium tridentatum</i>	Tomcat clover	SMC 2, SOW 1 2
	<i>Trifolium sp.</i>	clover	SMC 2
FAGACEAE	<i>Quercus agrifolia</i>	Coast live oak	SOW 1 2
	<i>Quercus berberidifolia</i>	scrub oak	SMC 1 2 3
GARRYACEAE	<i>Garrya veatchii</i>	Veatch silktassel	SMC, SOW 1 2 3

GERANIACEAE	<i>Erodium botrys</i> ♦	Long-beak filaree	SMC 1 2 3
GROSSULARIACEAE	<i>Ribes indecorum</i>	White flowering currant	SMC, SOW 1 2 3
HYDROPHYLACEAE	<i>Emmenanthe pendiflora</i>	Whispering bells	SMC 1 2 3
	<i>Nemophila menziesii</i>	San Diego baby-blue-eyes	SMC 1 2 3
	<i>Phacelia</i> sp.	phacelia	SMC 1 2 3
	<i>Phacelia brachyloba</i>	Shortlobe phacelia	SMC 1
	<i>Phacelia cicutaria</i>	Caterpillar phacelia	SMC 1
	<i>Phacelia distans</i>	Wild-heliotrope	SMC, SOW 1 2 3
	<i>Phacelia imbricata</i>		SOW 1
JUNCACEAE	<i>Juncus bufonius</i>	Toad rush	SMC 1
LAMIACEAE	<i>Salvia apiana</i>	White sage	SMC 2
	<i>Salvia columbariae</i>	Chia	SMC 1 2 3
	<i>Trichostema parishii</i>	Mountain blue-curls	SMC 1 2 3
LILIACEAE	<i>Calochortus concolor</i>	Goldenbowl mariposa	SMC 1 2 3
	<i>Dichelostemma capitatum</i> ssp. <i>pauciflorum</i>	Blue dicks	SMC 1 2 3
LOASACEAE	<i>Mentzelia</i> sp.	mentzelia	SOW 1 2 SMC 1
MALVACEAE	<i>Sidalcea malvaeflora</i>	Checkerbloom	SOW 1 2
ONAGRACEAE	<i>Camissonia californica</i>	Mustard evening primrose	SMC 1 2 3
	<i>Camissonia camaenerioides</i>	Willow-herb evening-primrose	SOW 1
	<i>Camissonia hirtella</i>	Field suncup	SMC, SOW 1 2 3
	<i>Clarkia purpurea quadrivulnera</i>	Farewell-to-spring	SOW 1, SMC 2
	<i>Epilobium canum californica</i>	California fuchsia	SOW, SMC 1 2
PAEONIACEAE	<i>Paeonia californica</i>	California peony	SMC 1 2 3
PAPAVERACEAE	<i>Eschscholzia californica</i>	California poppy	SMC, SOW 1 2
POACEAE	<i>Avena barbata</i> ♦	Slender oat	SMC, SOW 1
	<i>Bromus diandrus</i> var. <i>gussonei</i> ♦	Common or Gusson ripgut grass	SOW, SMC 1 2 3
	<i>Bromus madritensis</i> ♦	Compact chess	SOW 1 2
	<i>Bromus mollis</i> ♦	Soft chess	SOW 1 2
	<i>Bromus rubens</i> ♦	Foxtail chess	SMC, SOW 1 2 3
	<i>Bromus tectorum</i> ♦	Cheat-grass	SMC, SOW 1 2 3
	<i>Festuca</i> sp. ♦	fescue	SMC, SOW 1 2 3
	<i>Hordeum murinum glaucum</i> ♦	Glaucous barley	SOW 1 2
	<i>Melica imperfecta</i>	Coast range melic	SMC 1 2 3
	<i>Muhlenbergia rigens</i>	California deergrass	SOW 1
	<i>Schismus barbatus</i> ♦	Mediterranean schismus	SMC 1 2 3
POACEAE	<i>Sitanion hystrix</i>	Bottlebrush squirreltail	SMC 1
POLEMONIACEAE	<i>Eriastrum densifolium</i>	Chaparral woolly-star	SOW, SMC 1
	<i>Eriastrum sapphirinum</i>	Wolly-star	SOW, SMC 1 2 3
	<i>Gilia australis</i>	Southern gilia	SMC 1 2 3
	<i>Gilia capitata abrotanifolia</i>	Ball gilia	SMC, SOW 1 2 3
	<i>Gilia caruifolia</i>	Caraway-leaf gilia	SMC 1 2 3

	<i>Linanthus bellus</i>	Desert beauty	SMC 1 2 3
	<i>Linanthus bigelovii</i>	Bigelow's linanthus	SMC 1 3
	<i>Linanthus lemmmonii</i>	Lemmon linanthus	SMC 1 2 3
POLYGONACEAE	<i>Chorizanthe fimbriata</i>	Fringed Turkish rugging	SMC, SOW 1 2 3
	<i>Eriogonum elongatum</i>	Tall buckwheat	SMC 2
	<i>Eriogonum fasciculatum</i>	California buckwheat	SMC 1 2 3
	<i>Eriogonum wrightii</i>	Foothill buckwheat	SOW, SMC 1 2
	<i>Eriogonum</i> sp.	Annual buckwheat	SMC 1 2 3
	<i>Eriogonum</i> sp.	Annual buckwheat	SMC, SOW 1 2 3
	<i>Oxytheca trilobata</i>	Spinebract	SMC 1 2
PORTULACACEAE	<i>Pterostegia drymariooides</i>	California threadstem	SMC, SOW 1 2 3
	<i>Rumex crispus</i> ♦	Curly dock	SOW 1
	<i>Calyptidium monandrum</i>	Sandcress	SMC 1 2 3
	<i>Claytonia perfoliata</i>	Miner's lettuce	SMC, SOW 1 2 3
RANUNCULACEAE	<i>Delphinium parishii</i>	Colorado desert larkspur	SMC, SOW 1 2 3
RHAMNACEAE	<i>Thalictrum fendleri</i>	Meadow rue	SOW 1
	<i>Ceanothus cuneatus</i>	Buckbrush	SMC 1 2 3
	<i>Ceanothus leucodermis</i>	Whitebarked lilac	SMC, SOW 1 2 3
RHAMNACEAE	<i>Rhamnus californica</i>	Coffeeberry	SMC 1, SOW 1 2
	<i>Rhamnus ilicifolia</i>	Holly-leaf redberry	SMC, SOW 1 2 3
ROSACEAE	<i>Adenostoma fasciculatum</i>	Chamise	SMC 1 2 3
	<i>Adenostoma sparsifolium</i>	Red shank	SMC 1 2 3
	<i>Cercocarpus betuloides</i>	Birchleaf mountain mahogany	SMC 1 2 3
	<i>Prunus ilicifolia</i>	Holly-leaf cherry	SMC 1 2 3
	<i>Rosa californica</i>	California wild rose	SOW 1
RUBIACEAE	<i>Galium andrewsii</i>	Moss bedstraw	SMC, SOW 1 2 3
	<i>Galium angustifolium</i>	Narrow-leaf bedstraw	SMC, SOW 1
	<i>Galium aparine</i> ♦	Common bedstraw	SOW, SMC 1 2 3
SALICACEAE	<i>Salix lasiolepis</i>	Arroyo willow	SOW 1
	<i>Salix</i> sp.	willow	SOW 1
SCROPHULARIACEAE	<i>Antirrhinum coulterianum</i>	White snapdragon	SMC, SOW 1 2 3
	<i>Castilleja</i> sp.	indian paintbrush	SMC 1
	<i>Collinsia concolor</i>	Southern Chinese houses	SOW, SMC 1 2 3
	<i>Cordylanthus filifolius</i>	Thread-leaf birdsbeak	SMC 1
	<i>Diplacus aurantiacus</i>	San Diego monkey flower	SMC 1 2 3
	<i>Keckiella ternata</i>	Summer bush penstemon	SMC, SOW 1
	<i>Mimulus brevipes</i>	Slope semiphore	SMC 1 2
	<i>Mimulus fremontii</i>	Fremont's monkey flower	SMC 1
	<i>Mimulus guttatus</i>	Seep monkey flower	SOW 1, SMC 2
	<i>Penstemon centranthifolius</i>	Scarlet bugler	SOW 1

	<i>Penstemon clevelandii</i>	Cleveland penstemmon	SOW 1
	<i>Penstemon spectabilis</i>	Showy penstemmon	SMC 1 2
SOLANACEAE	<i>Solanum xanti</i>	Purple nightshade	SMC, SOW 1
URTICACEAE	<i>Urtica holosericea</i>	Stinging nettle	SOW 1
VIOLACEAE	<i>Viola</i> sp.	violet	SMC, SOW 1
VISCACEAE	<i>Phoradendron villosum</i>	Hairy mistletoe	SOW 1 2

\* = Non-native Plant Species      SOW=Southern Oak Woodland, SMC=Southern Mixed Chaparral